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PTO/SB/08A (05-03)

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|                       |              | NON PATENT LITERATURE DOCUMENTS   |    |
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|                       |              | A.C. EVANS, et al., "MRI-PET Correlation in Three Dimensions Using a Volume-of-Interest (VOI) Atlas," Journal of Cerebral Blood Flow & Metabolism, A69-A78, 1991.   |    |
|                       |              | D.G. THOMAS et al., "Use of relocatable stereotactic frame to integrate positron emission tomography and computed tomography images: application to human malignant brain tumors," Stereotactic and Functional Neurosurgery, 388-392, 1990.                     |    |
|                       |              | C.A. PELIZZARI et al., "Accurate three-dimensional registration of CT, PET and MR images of the brain," J Comp Assist Tomogr, 2026, 1989.   |    |
|                       |              | R.P. WOODS et al., "Rapid automated algorithm for aligning and reslicing PET images," J Comp Assist Tomogr, 620-633, 1992.  |    |
|                       |              | R.P. WOODS et al., "MRI-PET registration with an automated algorithm," J Comp Assist Tomogr, 536-546, 1993.   |    |
|                       |              | U. PEITRZYK et al., "Three-dimensional alignment of functional and morphological tomograms," J Comp Assist Tomogr, 51-59, 1990.   |    |
| ·                     |              | R. L. WAHL et al., "'Anatometabolic' tumor imaging: fusion of FDG PET with CT or MRI to localize foci of increased activity," J. Nucl. Med., 1190-1197, 1993.   |    |
| ·                     |              | T.F. LANG et al., "A prototype emission-transmission imaging system," IEEE Nucl. Sci. Symposium Conf. Record, 1902-1906, 1991.  |    |
|                       |              | T.F. LANG et al., "Description of a prototype emission-transmission computed tomography imaging system," J. Nucl. Med., 1881-1887, 1992.  |    |
| ·.                    |              |   |    |
| _                     |              | J.S. FLEMING, "A technique for using CT images in attenuation correction and quantification in SPECT," Nucl. Med. Commun, 83-97, 1989.  |    |
|                       |              |   |    |
|                       |              | S.C. MOORE, "Attenuation compensation" in Ell, P.J. et al., Computed Emission Tomography, London, Oxford University Press, 339-360, 1982.   |    |

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|                                 |              | B.H. HASEGAWA et al., "Object specific attenuation correction of SPECT with correlated dual-energy X-ray CT," IEEE Trans. Nucl. Sci., 1242-1252, 1993.  |    |  |  |  |  |
| , -                             |              | K.J. LaCROIX et al., "Investigation of the use of X-ray CT images for attenuation compensation in SPECT," IEEE 1993 Medical Imaging Conference Record, 1994.  |    |  |  |  |  |
|                                 |              | S.C. HUANG et al., "Quantitation in positron emission tomography: 2. Effects of inaccurate attenuation correction," J. Comput Assist Tomogr, 804-814, 1979.   |    |  |  |  |  |
|                                 |              | W.F. JONES et al., "Optimizing rod window width in positron emission tomography," IEEE 1992<br>Medical Imaging Conference Record, 982-984, 1993.  |    |  |  |  |  |
|                                 |              | R.A. de KAMP et al., "Attenuation correction in PET using single photon transmission measurement," Med. Phys., 771-778, 1994.   |    |  |  |  |  |
|                                 |              | QU HE et al., "Attenuation correction in PET using a singles transmission source," J. Nucl Med., 41P, 1994.   |    |  |  |  |  |
|                                 |              | R.E. ALVAREZ et al., "Energy-selective reconstructions in X-ray computerized tomography," Phys Med Biol., 733-744, 1976.  |    |  |  |  |  |
|                                 |              | D.E. AVRIN et al., "Clinical applications of Compton and photo-electric reconstruction in computed tomography: preliminary results," Invest Radiol, 217-222, 1978.  |    |  |  |  |  |
|                                 |              | M. BERGSTROM et al., "Correction for scattered radiation in a ring detector positron camera by integral transform of the projections," J. Comput. Assist. Tomogr., 42-50, 1983.   |    |  |  |  |  |
|                                 |              |   |    |  |  |  |  |
|                                 |              | M. ENDO et al., "Sofware correction of scatter coincidence in positron CT," Eur. J. Nucl. Med., 391-396, 1984.  |    |  |  |  |  |
| *                               |              |   |    |  |  |  |  |
|                                 |              | S.R. CHERRY et al., "Correction and characterization of scattered events in three dimensional PET using scanner with retractable septa," J Nucl Med, 671-678, 1993.   |    |  |  |  |  |

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|                       | D.L. BAILEY et al., "A convolution-subtraction scatter correction method for 3D PET," Phys Med Biol., 412-424, 1994.                         |  |  |  |  |  |  |  |  |
|                       | D. GAGNON et al., "Introduction to holospectral imaging in nuclear medicine for scatter subtraction," IEEE Trans Med Imaging, 245-250, 1989. |  |  |  |  |  |  |  |  |
|                       |  | S. GROOTOONK et al., "Correction for scatter using a dual energy window technique with a tomograph operating without septa," IEEE 1991 Medical Imaging Conference Record, 1569-1573, 1992.   |  |  |  |  |  |  |  |
|                       |  | B. BENDRIEM, et al., "A PET scatter correction using simultaneous acquisitions with low and high lower energy thresholds," IDDD 1993 Medical Imaging Conference Record, 1779-1783, 1994.   |  |  |  |  |  |  |  |
|                       |  | J.M. OLLINGER, "Model-based scatter correction for fully 3D PET," Phys Med Biol., 153-176, 1996.   |  |  |  |  |  |  |  |
|                       | ş  | C.C. WATSON, D. NEWPORT, and M.E. CASEY, "A single scatter simulation technique for scatter correction in 3D PET" in: Grangeat P and J-L Amans, Three Dimensional Image Reconstruction in Radiology and Nuclear Medicine, Dordrecht: Kluwer Academic, 255-268, 1996. |  |  |  |  |  |  |  |
| ·                     |  | R. LEAHY et al., "Incorporation of anatomical MR data for improved functional imaging with PET," Information Processing in Medical Imaging, XIIth IPMI International Conference Record, 1201-1203, 1993.   |  |  |  |  |  |  |  |
|                       |  | Z. ZHOU et al., "A comparative study of the effects of using anatomical priors in PET reconstruction," IEEE 1993 Medical Imaging Conference Record, 1749-1753, 1994.   |  |  |  |  |  |  |  |
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